

IN THE CLAIMS:

Claims 1-9, 11-13, 20, 22-44, 46-52, 56-63 and 65 were previously cancelled. Claims 45 and 55 have been amended herein. All of the pending claims are presented below. This listing of claims will replace all prior versions and listings of claims in the application. Please enter these claims as amended.

1.-9. (Cancelled)

10. (Previously presented) A method of selectively etching silicon, comprising:
exposing a silicon layer on a semiconductor substrate to an etch solution consisting of tetramethylammonium hydroxide ("TMAH") and at least one organic solvent selected from the group consisting of isopropanol, butanol, hexanol, glycol, glycerol, propylene glycol, ethylene glycol, glycerin, and mixtures thereof; and
removing the silicon layer without removing at least one of an exposed oxide layer, an exposed nitride layer, and an exposed polyimide layer also present on the semiconductor substrate.

11.-13. (Cancelled)

14. (Previously presented) The method of claim 10, wherein exposing the silicon layer on the semiconductor substrate to the etch solution consisting of TMAH and the at least one organic solvent selected from the group consisting of isopropanol, butanol, hexanol, glycol, glycerol, propylene glycol, ethylene glycol, glycerin, and mixtures thereof comprises exposing the silicon layer to the etch solution consisting of TMAH and propylene glycol.

15. (Previously presented) The method of claim 10, wherein exposing the silicon layer on the semiconductor substrate to the etch solution consisting of TMAH and the at least one organic solvent selected from the group consisting of isopropanol, butanol, hexanol, glycol, glycerol, propylene glycol, ethylene glycol, glycerin, and mixtures thereof comprises exposing the silicon layer to the etch solution consisting of from approximately 1% by weight to approximately 10% by weight of TMAH.

16. (Previously presented) The method of claim 10, wherein exposing the silicon layer on the semiconductor substrate to the etch solution consisting of TMAH and the at least one organic solvent selected from the group consisting of isopropanol, butanol, hexanol, glycol, glycerol, propylene glycol, ethylene glycol, glycerin, and mixtures thereof comprises exposing the silicon layer to the etch solution consisting of approximately 6% by weight of TMAH.

17. (Previously presented) The method of claim 10, wherein exposing the silicon layer on the semiconductor substrate to the etch solution consisting of TMAH and the at least one organic solvent selected from the group consisting of isopropanol, butanol, hexanol, glycol, glycerol, propylene glycol, ethylene glycol, glycerin, and mixtures thereof comprises exposing the silicon layer to the etch solution consisting of approximately 6% TMAH and approximately 94% propylene glycol.

18. (Previously presented) A method of removing a heat-affected zone ("HAZ") on a semiconductor substrate, comprising:
removing a HAZ on a silicon substrate without removing at least one of an exposed oxide layer and an exposed nitride layer present on the silicon substrate by exposing the silicon substrate to an etch solution comprising tetramethylammonium hydroxide ("TMAH") and at least one organic solvent selected from the group consisting of isopropanol, butanol, hexanol, phenol, glycol, glycerol, ethylene glycol, glycerin, and mixtures thereof; and

smoothing at least a portion of the silicon substrate with a second etch solution comprising ammonium fluoride, phosphoric acid, water, hydrogen peroxide, and at least one organic solvent.

19. (Previously presented) The method of claim 18, wherein removing the HAZ on the silicon substrate comprises removing the HAZ formed by laser ablation.

20. (Cancelled)

21. (Previously presented) The method of claim 18, further comprising removing at least a portion of the silicon substrate other than within the HAZ using the etch solution.

22.-44. (Cancelled)

45. (Currently amended) A method of forming an aperture in a through-wafer interconnect, comprising:
exposing a silicon substrate to a laser beam to form an aperture, wherein the laser beam forms a heat-affected zone ("HAZ") on the silicon substrate;
exposing the silicon substrate to an etch solution comprising tetramethylammonium hydroxide ("TMAH") and at least one organic solvent selected from the group consisting of isopropanol, butanol, hexanol, phenol, glycol, glycerol, ethylene glycol, glycerin, and mixtures thereof ~~thereof~~;
removing the HAZ without removing at least one of an exposed oxide layer, an exposed nitride layer, and an exposed polyimide layer present on the silicon substrate; and
removing at least a portion of the silicon substrate with a second etch solution comprising ammonium fluoride, phosphoric acid, water, hydrogen peroxide, and at least one organic solvent.

46.-52. (Cancelled)

53. (Previously presented) The method of claim 45, further comprising filling the aperture with a conductive material to form a through-wafer interconnect.

54. (Original) The method of claim 45, further comprising removing at least a portion of the silicon substrate with the etch solution.

55. (Currently amended) A method of forming a through-wafer interconnect, comprising:
exposing a silicon substrate to a laser beam to form an aperture, wherein the laser beam forms a heat-affected zone ("HAZ") on the silicon substrate;
removing the HAZ without removing at least one of an exposed oxide layer and an exposed nitride layer present on the silicon substrate by exposing the silicon substrate to a first etch solution comprising tetramethylammonium hydroxide ("TMAH") and at least one organic solvent selected from the group consisting of isopropanol, butanol, hexanol, phenol, glycol, glycerol, ethylene glycol, glycerin, and mixtures thereof; ~~thereof~~ thereof;
filling the aperture with a conductive material to form a through-wafer interconnect; and
removing at least a portion of the silicon substrate with a second etch solution comprising ammonium fluoride, phosphoric acid, water, hydrogen peroxide, and at least one organic solvent.

56.-63. (Cancelled)

64. (Previously presented) The method of claim 55, further comprising removing the at least a portion of the silicon substrate with the second etch solution to enlarge a diameter of the aperture.

65. (Cancelled)

66. (Previously presented) The method of claim 55, further comprising smoothing the at least a portion of the silicon substrate with the second etch solution comprising ammonium fluoride, phosphoric acid, water, hydrogen peroxide, and at least one organic solvent.

67. (Original) The method of claim 55, further comprising forming a passivation layer on sidewalls of the aperture before filling the aperture with the conductive material.